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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,240	10/31/2003	Satoshi Arakawa	Q78212	9031

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SUGHRUE MION, PLLC
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EXAMINER

TORRES, JOSE

ART UNIT	PAPER NUMBER
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2112

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/697,240

Applicant(s)

ARAKAWA, SATOSHI

Examiner

Jose M. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/31/2003, 12/20/2004 and 05/05/2006.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- FIG. 2A: "a"

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by C.

Small et al. "Validation of a 3D Optoelectronic Motion Analysis System for the Wrist Joint", Clinical Biomechanics, Vol. 11, No. 8.

Re claim 1: C. Small et al. disclose a diagnostic imaging apparatus (Abstract, page 481) comprising: a position-of-interest determination unit which determines a plurality of positions in a plurality of images of a predetermined part of an object which are taken during movement of the predetermined part, to be positions of interest in the plurality of images, where the plurality of positions in the plurality of images correspond to a predetermined position in the predetermined part (Methods, "portable X-ray unit", page 481 Column 2 line 9 through page 482 Column 1 line 11); and a characteristic-quantity calculation unit (Methods, "software", Page 482 Column 2 line 12) which calculates a characteristic quantity ("Euler angle") indicating a positional relationship between the positions of interest in the plurality of images (Methods, Page 482 Column 1 line 12 through Column 2 line 13).

Re claim 3: C. Small et al. disclose said predetermined part is a joint of a human body (Abstract, Page 481).

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Re claim 5: C. Small et al. disclose said plurality of images are a plurality of radiographic images which are taken by applying radiation to said predetermined part during the movement of the predetermined part (Abstract, "two hand postures", Page 481 and Methods, Page 481 Column 2 line 9 through Page 482 Column 1 line 11).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over C. Small et al. in view of Wang (U.S. 2002/0076091). The teachings of C. Small et al. have been discussed above.

C. Small et al. further teaches said predetermined part is a joint of a human body (Abstract, Page 481) as recited in claim 4, and a marker (Methods, "Surface markers", Page 481 Column 2 line 15) is attached to said predetermined part, said plurality of images are a plurality of radiographic images, and said position-of-interest determination unit determines positions of images of said marker to be said positions of interest, where said images of the marker are respectively formed in said plurality of

radiographic images by radiation which has passed through the marker (Methods, Page 481 Column 2 line 9 through Page 482 Column 2 line 11) as recited in claim 6.

However, C. Small et al. fails to teach an automatic diagnosis unit which outputs information on said predetermined part of said object, based on said characteristic quantity.

Wang teaches an automatic diagnosis unit which outputs information on said predetermined part of said object, based on said characteristic quantity (FIG. 1, "abnormal feature extraction sub-stage 51", Paragraph [0021]) as recited in claim 2.

Therefore, in view of Wang, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify C. Small et al.'s system by incorporating an automatic diagnosis unit which outputs information on said predetermined part of said object, based on said characteristic quantity in order to provide annotation information that can include an assessment of the probability, likelihood or predictive value of a CAD-detected abnormality as an additional aid to radiologists or users.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over C. Small et al. in view of Kido et al. (U.S. 5,732,149). The teachings of C. Small et al. have been discussed above.

However, C. Small et al. fails to disclose said plurality of radiographic images are taken by using a solid-state radiation detector which generates and stores electric charges when the solid-state radiation detector is irradiated with radiation.

Kido et al. teaches said plurality of radiographic images are taken by using a solid-state radiation detector which generates and stores electric charges when the solid-state radiation detector is irradiated with radiation (FIG. 4, "radiation image conversion panel 4", Column 7 lines 5-26).

Therefore, in view of Kido et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify C. Small et al.'s system by using a radiation image conversion panel as an image forming apparatus that accumulates energy when irradiated with radioactive rays in order to enhance the extraction accuracy.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over C. Small et al. in view of Wang as applied to claim 6 above, and further in view of Kido et al. The teachings of C. Small et al. modified by Wang have been discussed above.

However, C. Small et al. modified by Wang fails to disclose said plurality of radiographic images are taken by using a solid-state radiation detector which generates and stores electric charges when the solid-state radiation detector is irradiated with radiation.

Kido et al. teaches said plurality of radiographic images are taken by using a solid-state radiation detector which generates and stores electric charges when the solid-state radiation detector is irradiated with radiation (FIG. 4, "radiation image conversion panel 4", Column 7 lines 5-26).

Therefore, in view of Kido et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify C. Small et al.'s system as modified by Wang by using a radiation image conversion panel as an image forming apparatus that accumulates energy when irradiated with radioactive rays in order to enhance the extraction accuracy.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kimata disclose an Infrared Solid State Image Sensing Device, Cox et al. disclose an X-ray Imaging System and Solid State Detector Therefor and Hara et al. disclose an Abnormal Pattern Detecting Apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose M. Torres whose telephone number is 571-270-1356. The examiner can normally be reached on Monday thru Friday: 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee can be reached on 571-272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMT
12/06/06



JONG SUK LEE
SUPERVISORY PATENT EXAMINER